UNITED STATES ENVIRONMENTAL PROTECTION AGENCY REGION III



Environmental Sciences Center 701 Mapes Road Fort Meade, Maryland 20755-5350

DATE:

February 7, 2012

SUBJECT:

Region III Data QA Review

FROM:

Colleen Walling

Region III ESAT RPO (3EA20)

TO:

Rich Fetzer

Regional Project Manager (3HS31)

Attached is the inorganic data validation report for the Dimock Residential Groundwater site (Case #: 180-2644-01 (4 samples) completed by the Region III Environmental Services Assistance Team (ESAT) contractor under the direction of Region III EAID.

If you have any questions regarding this review, please call me at (410) 305-2763.

Attachment

TO: #0037

TDF: #01079A

cc: Gene Nancy (Techlaw)

Suddha Graves (Techlaw)

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Energy & Environment
ESAT Region 3
US EPA Environmental Science Center
701 Mapes Road Ft. Meade, MD 20755-5350
Telephone 410-305-3037 Facsimile 410-305-3597

Date:

February 06, 2012

Subject:

Inorganic Data Validation (IM2 Level)

Project: 180-2644-1

Site: Dimock

From:

Ex. 4 - CBI

Inorganic Data Reviewer

Mahboobeh Mecanic Senior Oversight Chemist

To:

Colleen Walling

ESAT Region 3 Project Officer

OVERVIEW

Third Party Project 180-2644-1 consisted of two (2) aqueous samples analyzed for mercury (Hg) by cold vapor technique and for total metals by ICP-MS. In addition, these samples were filtered by the laboratory and analyzed for dissolved Hg and dissolved metals. Samples were analyzed by TestAmerica Pittsburgh (TALPA) according to SW-846 Methods 7470A (Hg) and 6020 (metals).

SUMMARY

Data were validated according to Region 3 Modifications to the National Functional Guidelines for Inorganic Data Review, Level IM2, and is assigned the Superfund Data Validation Label S4VM (Stage_4_Validation_Manual). Areas of concern with respect to data usability are listed below.

Data in this case have been impacted by outliers present in laboratory blanks. Details of these outliers are discussed under "Minor Problem," specific samples affected are outlined in "Table 1A" and qualified analytical results for all samples are summarized on Data Summary Forms (DSFs).

MINOR PROBLEM

The Method (MB) and Continuing Calibration (CCBs) Blanks had reported results greater than the Method Detection Limits (MDLs) for the analytes listed below. Positive results for these analytes in affected samples which are less than five times (<5X) blank concentrations may be biased high and have been qualified "B" on the DSF.

Blank

Affected Analytes

CCB

lead (Pb), molybdenum (Mo), antimony (Sb), thallium (Tl)

MB (Total)

zinc (Zn)

NOTES

Reported results between MDLs and Reporting Limits (RLs) were qualified "J" unless superseded by "B" on the DSF.

The laboratory reported results within control limits for matrix spike/matrix spike duplicate and ICP serial dilution analyses. However, these analyses were not performed on a sample in this sample set. No action was taken by the reviewer based on this finding.

The requirement for ICP-MS and cold vapor MDLs to be performed within one (1) year of sample analysis was not met by the laboratory. No action was taken by the reviewer based on these findings.

ATTACHMENTS

INFORMATION REGARDING REPORT CONTENT

Table 1A is a summary of qualifiers applied to the laboratory-generated results during data validation.

Table 1A

Summary of qualifiers on data summary forms after data validation

Table 1B

Codes used in comments column of Table 1A

Appendix A

Glossary of Data Qualifier Codes

Appendix B

Data Summary Form(s)

Appendix C

Chain of Custody Records

Appendix D

Laboratory Case Narrative

DCN: 180-2644-1 Metals

DIM0191127 DIM0191125

TABLE 1A SUMMARY OF QUALIFIERS ON DATA SUMMARY FORM AFTER DATA VALIDATION

Project: 180-2644-1

| ANALYTE | SAMPLES AFFECTED | POSITIVE VALUES | NON- DETECTED VALUES | BIAS | COMMENTS* |
|---------|-----------------------------|--------------------|----------------------------|--------|---------------------|
| Pb | Both samples - Total | В | | High | CCB (0.0280 J ug/L) |
| | Both samples – Dissolved | В | . ** | High | CCB (0.0410 J ug/L) |
| Мо | Both samples – Total | В | | High | CCB (0.454 J ug/L) |
| | Both samples – Dissolved | В | | High | CCB (1.04 J ug/L) |
| Sb | Both samples - Total | В | | High | CCB (0.394 J ug/L) |
| | Both samples – Dissolved | В | | High | CCB (0.548 J ug/L) |
| TI | Both samples – Dissolved | В | | High | CCB (0.0240 J ug/L) |
| Zn | Both samples - Total | В | | High . | MB (2.53 J ug/L) |

^{*} See explanation of comments in Table 1B

TABLE 1B CODES USED IN COMMENTS COLUMN

- CCB = Continuing calibration blanks had results >MDLs [results are in parenthesis]. Positive results which are <5X blank concentrations may be biased high.
- MB = The method blank had a result > MDL [the result is in parenthesis]. Positive results which are <5X the blank concentration may be biased high.

Appendix A
Glossary of Data Qualifier Codes

GLOSSARY OF DATA QUALIFIER CODES (INORGANIC)

CODES RELATED TO IDENTIFICATION

(confidence concerning presence or absence of compounds)

U = Not detected. The associated number indicates approximate sample concentration necessary to be detected.

(NO CODE) = Confirmed identification.

- B = Not detected substantially above the level reported in laboratory or field blanks.
- R = Unusable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

CODES RELATED TO QUANTITATION

(can be used for both positive results and sample quantitation limits):

- J = Analyte present. Reported value may not be accurate or precise.
- K = Analyte present. Reported value may be biased high. Actual value is expected to be lower.
- L = Analyte present. Reported value may be biased low. Actual value is expected to be higher.
- UJ = Not detected, quantitation limit may be inaccurate or imprecise.
- UL = Not detected, quantitation limit is probably higher.

OTHER CODES

Q = No analytical result.

Appendix B Data Summary Forms

Project #: 180-2644-1

Site: DIMOCK

Lab.: TALPA

Number of Soil Samples: 0

Number of Water Samples: 4

| Sample Number / Lo | cation: | | TC | -1 | | | AW | -2 | | | |
|--------------------|---------|--------------|-------|-------------|--------|--------------|-------|---|--------|--------|--|
| Analysis Type: | | Total Metals | S | Dissolved M | letals | Total Metals | 3 | Dissolved M | letals | | |
| Matrix: | Water | | Water | | Water | | Water | | | | |
| Units: | ** | ug/L | | ug/L | | ug/L | | ug/L | | | |
| Date Sampled: | | 08/04/2011 | | 08/04/2011 | | 08/04/2011 | i, | 08/04/2011 | | | |
| Time Sampled: | | 09:30 | | 09:30 | | 13:20 | | 13:20 | 1 | | |
| Dilution Factor: | | 1.0 | | 1.0 | | 1.0 | | 1.0 | | | |
| ANALYTE | RL | Result | Flag | Result | Flag | Result | Flag | Result | Flag | Result | Flag |
| SILVER | 1.0 | | | | | | | | | | |
| ALUMINUM | 30 | 3.8 | J | | | 3.0 | J | | | | A. A |
| ARSENIC | 1.0 | 2.2 | | 0.77 | J | 0.47 | J | | 1 1 | | |
| BARIUM | 10 | 210 | | 210 | | 130 | | 130 | | | |
| BORON | 5.0 | 24 | | 25 | l | 13 | | 14 | | | |
| BERYLLIUM | 1.0 | | | | | | | *************************************** | | | |
| CALCIUM | 100 | 22000 | | 26000 | 1 | 27000 | | 31000 | | | |
| CADMIUM | 1.0 | | | | | | | | | | |
| COBALT | 0.50 | 0.051 | J | 0.089 | J | 0.067 | J | 0.11 | J J | | |
| CHROMIUM | 2.0 | 1.3 | J | 3.6 | • | 2.0 | | 4.3 | | | |
| COPPER | 2.0 | 1.1 | J | 0.90 | J | 0.64 | J | 0.77 | J | | |
| IRON | 50 | 1100 | | 27 | l j | | | | | | |
| POTASSIUM | 100 | 880 | | 1100 | | 1500 | | 1800 | | | |
| MAGNESIUM | 100 | 4800 | | 5200 | | 7700 | | 8200 | | | |
| MANGANESE | 0.50 | 190 | | 200 | l | 0.42 | J | 0.45 | J | | |
| SODIUM | 100 | 18000 | | 19000 | | 7300 | | 8100 | | | |
| NICKEL | 1.0 | | 247. | 0.51 | / J | | | 0.44 | J | | |
| LEAD | 1.0 | 0.11 | В | 0.14 | В | 0.027 | В | 0.092 | В | | |
| MOLYBDENUM | 5.0 | 0.49 | В | 1.3 | В | 0.55 | В | 0.56 | В | | |
| ANTIMONY | 2.0 | 0.019 | В | 0.65 | В | 0.78 | В | 0.23 | В | | |
| SELENIUM | 5.0 | 0.76 | J | 0.55 | J | 0.84 | J | | | | |
| THALLIUM | 1.0 | | | 0.025 | В | | | 0.021 | В | | |
| VANADIUM | 1.0 | | | | | | | |]] | | |
| ZINC | 5.0 | 2.6 | В | 2.8 | l , | 4.2 | В | 2.3 | J | | |
| MERCURY | 0.20 | | | | | | | | | | |

RL = Reporting Limit

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (RQ * Dilution Factor)

Revised 09/99

Appendix C Chain of Custody Records

| Thomas Merski Jiw Pinta Carrie Gamber 005408 Telephone 1 A12-503-4603 AD-860-6342(Cell) 412-963-7058 -01-000 Telephone 1 A12-503-4603 AD-860-6342(Cell) 412-963-7058 -01-000 The blood of Stephene 1 Analyze 1 Analyz | Client Contact | Client Project 8 | ory program: (anager: | | DW. | | NPT | ode et | \perp | RCR | | | Other | | Sastect | | | | | - | - 1- | | | stAmerica Lab | |
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| Marie Principal Marie Mari | DI Holiday Dr. Suite 300 | 412- | 503-4 | 603 | v. | | 17-960-6342 (Cell) | | | | | | 412-963-7058 | | | | | | | | or | _ cocs | | | |
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Appendix D Laboratory Case Narrative

COVER PAGE METALS

| Lab Name: | TestAmerica Pittsburgh | Job Number: 180-2644-1 |
|-----------|-------------------------|------------------------|
| SDG No.: | | |
| Project: | Focused Site Assessment | |
| | Client Sample ID | Lab Sample ID |
| | TC-1 | 180-2644-1 |
| | AW-2 | 180-2644-2 |

| Commen | its: |
|--------|------|
| | |
| | |
| | |

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CABOT-EPA 001098



ANALYTICAL REPORT

Job Number: 180-2644-1

Job Description: Focused Site Assessment

For:

URS Corporation Foster Plaza 4 501 Holiday Drive, Suite 300 Pittsburgh, PA 15220

Attention: Mr. James Pinta, Jr.

Approved for release. JR L Colussy Project Mgmit, Assistant 9/13/2011 8:29 AM

Designee for
Carrie L Gamber
Project Manager II
carrie.gamber@testamericainc.com
09/13/2011

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of TestAmerica and its client. All questions regarding this report should be directed to the TestAmerica Project Manager or designee who has signed this report.

TestAmerica Laboratories, Inc.

TestAmerica Pittsburgh 301 Alpha Drive, RIDC Park, Pittsburgh, PA 15238 Tel (412) 963-7058 Fax (412) 963-2468 www.testamericainc.com

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CABOT-EPA 000176

CASE NARRATIVE

Client: URS Corporation

Project: Focused Site Assessment

Report Number: 180-2644-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 08/05/2011; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 0.0 and 0.7 C.

The laboratory received a broken 1L amber bottle for sample TC-1 (180-2644-1).

The laboratory only received six VOA vials for sample AW-2 (180-2644-2) instead of nine.

LOW LEVEL VOLATILE ORGANIC COMPOUNDS

Methylene Chloride and Toluene were detected in method blank MB 180-10937/3 at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged "J". If the associated sample reported a result above the MDL and/or RL, the result has been "B" flagged

SEMIVOLATILE ORGANIC COMPOUNDS (GC-MS)

No difficulties were encountered during the semivolatiles analyses.

GAS RANGE ORGANICS

No difficulties were encountered during the GRO analyses.

GLYCOLS

Triethylene Glycol was detected in method blank MB 480-27399/1-A at a level exceeding the reporting limit. If the associated sample reported a result above the MDL and/or RL, the result has been "B" flagged.

The continuing calibration verification (CCV) (CCV 480-27383/3) for Ethylene Glycol recovered above the upper control limit. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

DISSOLVED GASES

The following samples submitted for dissolved gases analysis were received with incorrect preservation (pH >2): AW-2 (180-2644-2) and TC-1 (180-2644-1).

1.2-DIBROMOETHANE AND 1.2-DIBROMO-3-CHLOROPROPANE BY MICROEXTRACTION AND GAS CHROMATOGRAPHY No difficulties were encountered during the EDB and DBCP analyses.

DIESEL RANGE ORGANICS

No difficulties were encountered during the DRO analyses.

<u>METALS</u>

Antimony, Boron and Molybdenum were detected in method blank MB 180-10641/1-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged "J". If the associated sample reported a result above the MDL and/or RL, the result has been "B" flagged. Refer to the QC report for details.

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CABOT-EPA 000183

Several analytes were detected in method blank MB 180-10417/1-A at levels that were above the method detection limit but below the reporting limit. The values should be considered estimates, and have been flagged "J". If the associated sample reported a result above the MDL and/or RL, the result has been "B" flagged. Refer to the QC report for details.

GENERAL CHEMISTRY

The method blanks had compounds detected at a level that was above the method detection limit but below the reporting limit. The values should be considered an estimate, and have been flagged "J". If the associated sample reported a result above the MDL and/or RL, the result has been "B" flagged.

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CABOT-EPA 000184